avgear

USER MANUAL

AVG-HDWP70TX-IR

HDBaseT Wallplate Transmitter
Infrared

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Version: HDWP70TX-IR_2015V1.0

AVG-HDWP70TX-IR is a Decora style transmitter that installs in a double-gang wall plate to provide a convenient interface for HDMI and VGA input sources

Features

- Selectable HDMI/ VGA with audio input
- Supports VGA output resolutions up to 1920x1200
- High bandwidth: 10.2Gbps
- In-built scaler function, supports scaling of HDMI/ VGA signals to match the native resolution of the display
- Transmits HDMI signals up to 4K
- Compliant with HDMI 1.4, supports 1080p 3D
- HDCP compliant, equipped with HDCP auto-tracking function
- Provides auto-switching capability
- Supports multiple control methods including front panel buttons, IR, and RS232, supports bi-directional IR & RS232 pass-through control.
- Supports firmware upgrading via USB.
- DC 12V power output
- Powered by local a power pack or PoC connection up to 60m
- Aluminum design for efficient better cooling

PLEASE READ THIS PRODUCT MANUAL CAREFULLY BEFORE USING THIS PRODUCT.

This manual is for operational use only, and not to be used in a maintenance capacity. The functions described in this version are current as at March 2015. Any changes of functions and operational parameters will be updated in future manual versions. Please refer to your dealer for the latest product details.

Version 1.0 1/3/15

SAFETY OPERATION GUIDE

In order to guarantee the reliable operation of the equipment and safety of the user, please abide by the following procedures in installation, use and maintenance:

1. The system must be earthed properly. Please do not use two blade plugs and ensure the AC power supply ranges from 100v to 240v and from 50Hz to 60Hz.
2. Do not install the switcher in an environment where it will be exposed to extreme hot or cold temperatures.
3. This unit will generate heat during operation, please ensure that you allow adequate ventilation to ensure reliable operation.
4. Please disconnect the unit from mains power if it will be left unused for a long time.
5. Please DO NOT try to open the casing of the equipment, DO NOT attempt to repair the unit. Opening the unit will void the warranty. There are high voltage components in the unit and attempting to repair the unit could result in serious injury.
6. Do not allow the unit to come into contact with any liquid as that could result in personal injury and product failure.

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1. Introduction

1.1. Introduction to the AVG-HDWP70TX-IR

AVG-HDWP70TX-IR is a Decora style transmitter that installs in a double-gang wall plate to provide a convenient interface for HDMI and VGA input sources.

It has 1 HDMI IN, 1 VGA IN, 1 Audio IN and 1 HDBT OUT with PoC. It supports VGA with a full HD scaler, and HDMI 1.4 with 4k & 3D. Input signals support auto-switching. The HDBaseT output supports 60m UHD video transmission with PoC, enables bi-directional IR and RS232 communication between HDWP70TX-IR and a remote device.

With its PoC solution, the AVG-HDWP70TX-IR can be powered by a far-end PoC receiver.

1.2. Features

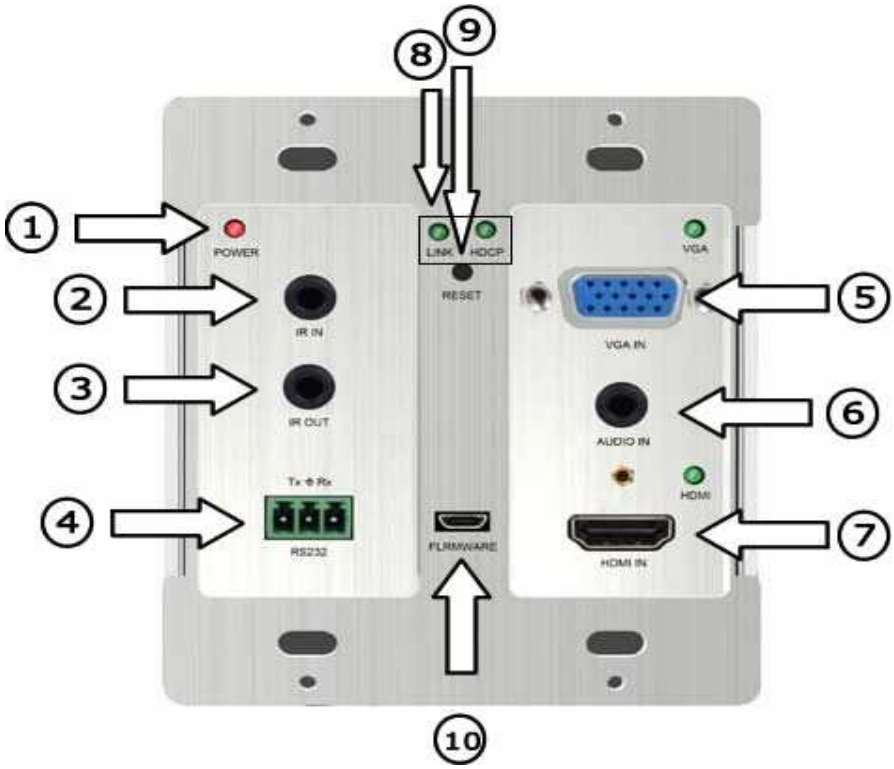
- Selectable HDMI/ VGA with audio input
- Supports VGA output resolutions up to 1920x1200
- High bandwidth: 10.2Gbps
- Built-in scaler function, supports scaling HDMI and VGA signals to match the native resolution of the display
- Transmits HDMI signals up to 4K
- Compliant with HDMI 1.4, supports 1080p 3D
- HDCP compliant, equipped with HDCP auto-tracking function
- Provides auto-switching capability
- Supports multiple control methods including front panel buttons, IR, and RS232, supports bi-directional IR & RS232 pass-through control.
- Supports firmware upgrading via USB.
- DC 12V power output
- Powered by local power pack or PoC connection up to 60m
- Aluminum design for efficient cooling

2. Package List

- 1 x AVG-HDWP70TX-IR
- 4 x Screws
- 3 x Pluggable Terminal Blocks (1 2-pin block, 1 3-pin block, and 1 4-pin block)
- 1 x Face Plate (Selectable)
- 4 x Screws (for the face plate)
- 1 x Power Adapter (DC 12V 2A, selectable)
- 1 x User Manual

Note: Please confirm if the product and the accessories are all included, if not, please contact your dealer.

3. Product Appearance



3.1. Front Panel

Note: Pictures shown in this manual are for reference only.

No.	Name	Description
①	Power indicator	Illuminates red when power is on
②	IR IN	Connect with IR receiver, receive IR signals sent from the IR Emitter connected to the far-end receiver
③	IR OUT	Connect with IR Emitter, IR signals emitted from the IR emitter are received by the IR receiver connected to the far-end receiver.
④	RS232	Serial port, 3-pin pluggable terminal block, connects with the control terminal to control the HDWP70TX-IR, supports bi-directional RS232 control (send control signal from local or receive control signal sent from far-end devices).
⑤	VGA IN	Connect with a VGA source device. The indicator: ✓ illuminates yellow when there is VGA signal input ✓ illuminates green when the signal source is chosen as

		input source ✓ turns off when there is no VGA input signal
⑥	AUDIO IN	Connect with the audio output socket of the VGA source device, delivers synchronous audio with the VGA signal source when VGA is the source signal.
⑦	HDMI IN	Connect with HDMI source device. The indicator will illuminate yellow when there is VGA signal input and illuminates green when the signal source is chosen as input source.
⑧	LINK &HDCP	✓ LINK: Twisted Pair Link status indicator, illuminates green when successfully connected. ✓ HDCP: HDCP compliance indicator, illuminates green when the source signals is with HDCP; blinks when it is not with HDCP; and turns off when there is no source signal.
⑨	RESET	Press the button to reboot HDWP70TX-IR.
⑩	FIRMWARE	USB port, used for firmware updates Plug a flash disk or other storage device with update file (MERGE.bin), and send command **50698%** to update firmware.

Note: Pictures shown in this manual are for reference only.

3.2. Side Panel

No.	Name	Description
①	HDBT OUT	RJ45 port, connect with receiver via a CAT5e/6 cable to deliver Audio/ Video signals, supports PoC.

Note: Pictures shown in this manual are for reference only.

3.3 Rear Panel

No.	Name	Description
①	Power In	Power in port, 2-pin pluggable terminal block, connect with a DC 12V power adapter
②	Power Out	Power out port, for powering 3rd party equipment
③	RS232	Serial port, connects with a far-end receiver, supports bi-directional RS232 control (send control signal from local TX or receive control signal sent from far-end devices).

Note: Pictures shown in this manual are for reference only.

4. System Connection

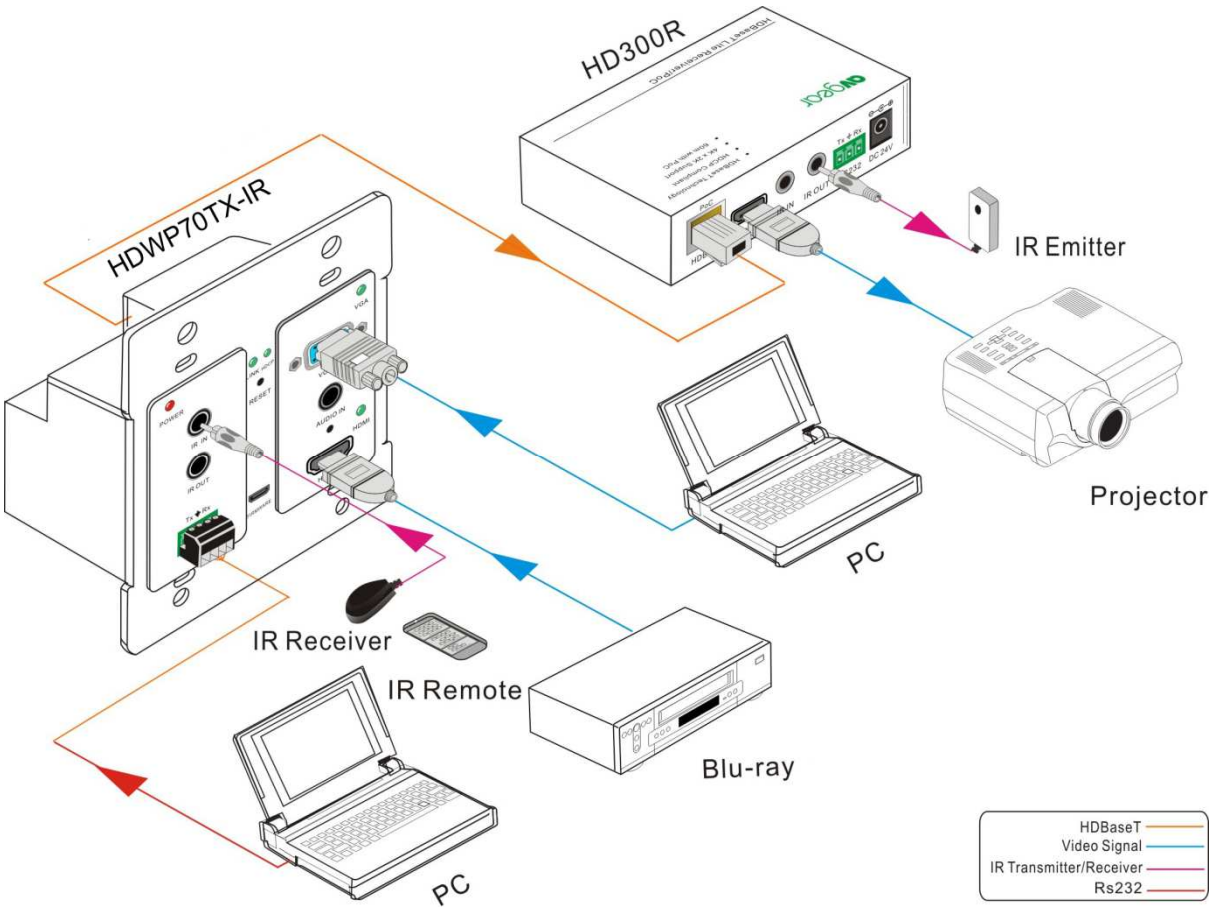
4.1. System Applications

Reliable performance for control and transmission makes the AVG-HDWP70TX-IR ideal in the IT computer space, signal monitoring, big screen displays, conference systems, television broadcast, education, banking and security institutions etc.

4.2. Usage Precautions

1. System should be installed in a clean environment with temperature and humidity maintained to within equipment specification.
2. All of the power switches, plugs, sockets and power cords should be insulated and safe.
3. All devices should be connected before power is turned on.

4.3. Connection Diagram



Note: Pictures shown in this manual are for reference only.

4.4. Connection Procedure

Step 1. Connect HDMI source device (e.g. Blu-ray DVD) to the HDMI input port of the AVG-HDWP70TX-IR with HDMI cable. Connect a VGA source device (e.g. PC) to the VGA input port of AVG-HDWP70TX-IR with VGA cable

Step 2. Connect an AVG-HD402PR to the HDBT port on the rear panel with twisted pair.

Step 3. Connect a HDMI display to the HDMI OUT port of AVG-HD402PR

Step 4. Connect a control terminal to the RS232 port on the front panel of AVG-HD402PR.

Step 5. Both AVG-HDWP70TX-IR and AVG-HD402PR have IR IN and OUT. When one model is used for IR signal receiver, the IR signal must be sent out by the other model.

For example: When "IR IN" of AVG-HDWP70TX-IR connects with an IR receiver, the IR transmitter must connect to IR OUT of the AVG-HD402PR.

The IR signal can be transmitted bi-directionally between the AVG-HDWP70TX-IR and AVG-HD402PR.

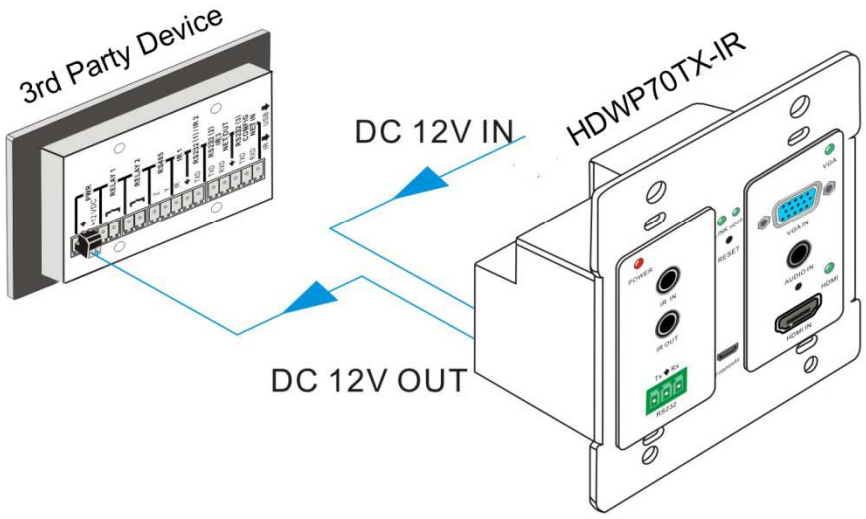
Step 6. Connect a control device (e.g. PC) to the RS232 port of AVG-HDWP70TX-IR or AVG-HD402PR (bi-directional RS232 control, either is available)

Step 7. Connect a DC 24V power adaptor to the power port of the AVG-HD402PR. The AVG-HDWP70TX-IR is able to get power from the AVG-HD402PR with the PoC solution.

Note: AVG-HDWP70TX-IR supports unidirectional PoC, i.e, AVG-HDWP70TX-IR can get power from far-end PoC devices with the PoC function. However, it can't power a far-end PoC device when the power supply is connected to HDWP100TX-IR.

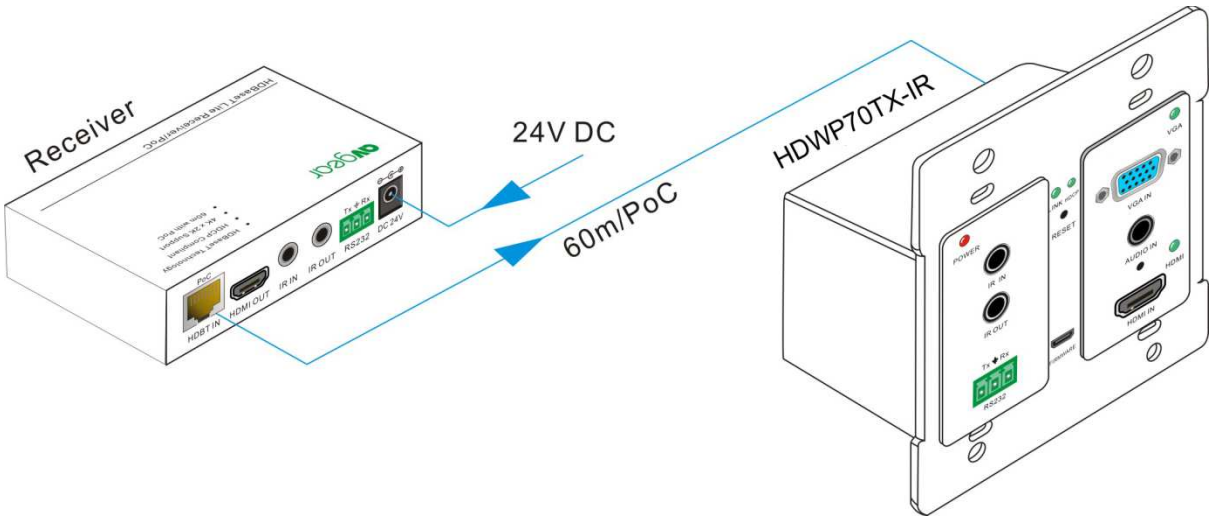
4.5. 12V DC Output

AVG-HDWP70TX-IR has a 12V power output port on the rear panel. Connect the 12V power output port of AVG-HDWP70TX-IR to the power port of a 3rd Party Device for convenient localized powering.



Note: Pictures shown in this manual are for reference only.

4.6. PoC Solution



Note: Pictures shown in this manual are for reference only.

5. System Operations

5.1. IR Control

AVG-HDWP70TX-IR provides an IR IN/ IR OUT socket for connection to an IR receiver/ IR Transmitter to attain bi-directional IR transmission with the far-end receiver.

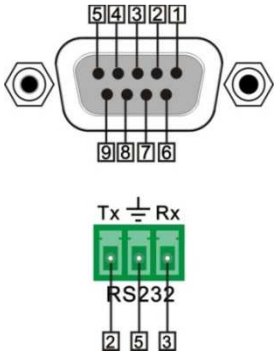
1. Control the far-end output device from the local matrix location.
2. Control the local input/output device remotely.

5.2. RS232 Control

As RS232 can be transmitted bi-directionally between the AVG-HDWP70TX-IR and AVG-HD402PR, enabling it to control a third party RS232 device locally or control the AVG-HDWP70TX-IR remotely. When controlling a third party RS232 device, the baud rate of this device should be 2400, 4800, 9600, 19200, 38400, 57600 or 115200.

5.2.1 Connection with the RS232 Communication Port

As well as the front control panel, the AVG-HDWP70TX-IR can be controlled by a 3rd Part control system through the RS232 communication port. This RS232 communication port is a female 9-pin D connector. The definition of its pins is listed in the table below.



No.	Pin	Function
1	N/C	Unused
2	Tx	Transmit
3	Rx	Receive
4	N/C	Unused
5	Gnd	Ground
6	N/C	Unused
7	N/C	Unused
8	N/C	Unused
9	N/C	Unused

5.2.2. Installation/Removal of RS232 Control Software

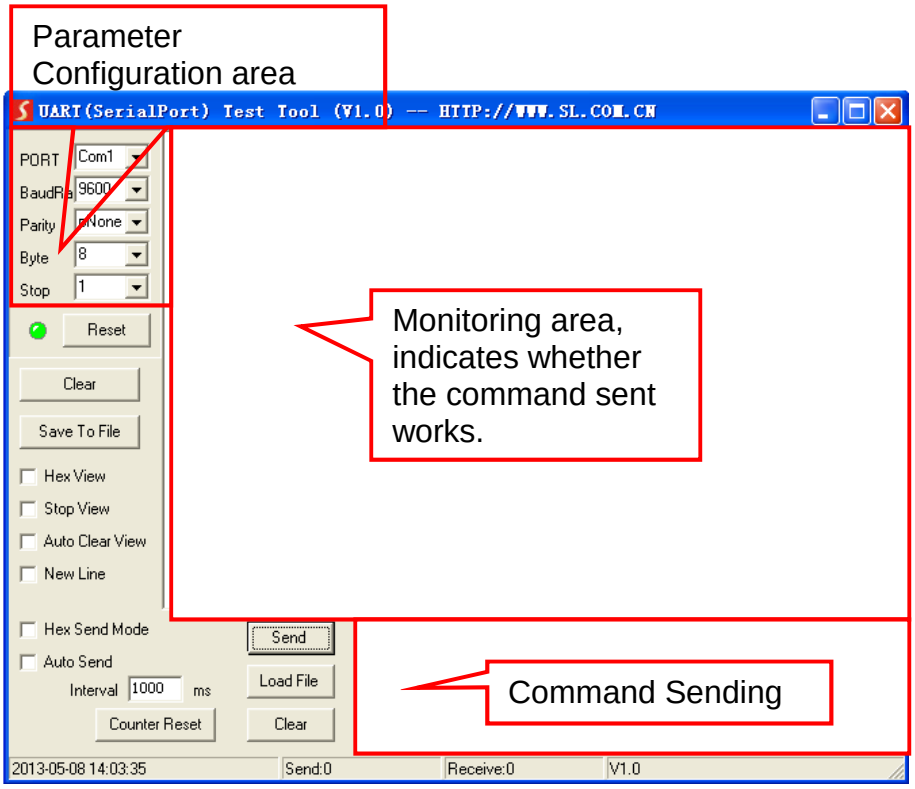
- **Installation** Copy the control software file to the computer connected with the Matrix.
- **Removal** Delete all the control software files in corresponding file path.

5.2.3. Basic Settings

Firstly, connect the AVG-HDWP70TX-IR with an input device and an output device. Then, connect it with a computer which is installed with RS232 control software. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as example. The icon is pictured as below:

The interface of the control software is shown below:



Please set the parameters of COM number, baud rate, data bit, stop bit and the parity bit correctly, only then will you be able to send commands in the Command Sending Area.

5.3. RS232 Communication Commands

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Command	Function	Feedback Example
System Commands		
50701%	Switch to HDMI input	Switch to HDMI
50704%	Switch to VGA input	Switch to VGA
50770%	Enable auto-switching	Auto Switching
50771%	Disable auto-switching	Manual Switching
Resolution Commands		
50619%	Change the resolution to 1360X768 HD	Resolution: 1360x768
50626%	Change the resolution to 1024X768 XGA	Resolution: 1024x768
50627%	Change the resolution to 1280X720 720P	Resolution: 1280x720
50628%	Change the resolution to 1280X800 WXGA	Resolution: 1280x800
50629%	Change the resolution to 1920X1080 1080P	Resolution: 1920x1080
50620%	Change the resolution to1920X1200 WUXGA	Resolution: 1920x1200
50621%	Change the resolution to1600X1200 UXGA	Resolution: 1600x1200
Setup Commands		
502xx%	Set the brightness to xx. XX ranges from 00 to 99	Brightness: xx
503xx%	Set the contrast to xx. XX ranges from 00 to 99	Contrast: xx
504xx%	Set the saturation to xx. XX ranges from 00 to 99	Saturation: xx
505xx%	Set the sharpness to xx. XX ranges from 00 to 99	Sharpness: xx
50606%	Auto-adjust the input parameter	VGA Input Auto

Command	Function	Feedback Example
50607%	Adjust the color temperature	Color Temperature: xx (xx can be medium, warm, user, or cool)
50608%	Set the aspect ratio	Aspect Ratio: xx (xx can be 16:9, 4:3, or auto.)
50614%	Set the picture mode	Picture Mode: xx (xx can be dynamic, standard, mild, or user.)
50699%	Check the system version	Version Vx.x.x
50779%	Switch to RS232 mode 1, enable scaler to control far-end devices	RS232 Mode 1: RS232 Control Scaler & Remote
50780%	Switch to RS232 mode 2, enable far-end devices to control scaler	RS232 Mode 2:RS232 & Remote Control Scaler
50790%	Set the HDCP status of HDMI output socket to Active	HDCP Active
50791%	Set the HDCP status of HDMI output socket to On	HDCP On
50792%	Set the HDCP status of HDMI output socket to Off	HDCP Off
50698%	Software update	
50617%	Reset to factory default	
Query Commands		
50632%	Check the output resolution	Resolution: xx
50633%	Check the picture mode	Picture Mode: xx
50793%	Check HDCP status	HDCP Off HDCP On HDCP Active

Command	Function	Feedback Example
50635%	Check the image aspect ratio	Aspect Ratio: xx
50636%	Check the brightness	Brightness: xx
50637%	Check the contrast	Contrast: xx
50638%	Check the saturation	Saturation: xx
50639%	Check sharpness	Sharpness: xx
50640%	Check the color temperature	Color Temperature: xx
Adjustment Commands		
50678%	Enable screen output adjusting	Enter Output Position Adjust
50679%	Disable screen output adjusting	Exit Output Position Adjust
50670%	Move the image to left	Output Position Adjust X xx
50671%	Move the image to right	Output Position Adjust X xx
50672%	Move the image up	Output Position Adjust Y xx
50673%	Move the image down	Output Position Adjust Y xx
50674%	Stretch left from left side (increase image width)	Output Width Adjust xx
50675%	Pull right from left side (decrease image width)	Output Width Adjust xx
50676%	Stretch upwards from bottom side (decrease image height)	Output Height Adjust xx
50677%	Stretch downwards from bottom side (increase image height)	Output Height Adjust xx
EDID Commands		
50772%	EDID pass-through	EDID: bypass mode
50773%	Set EDID data to 1080P PCM 2.0ch	EDID:1080P&PCM 2ch
50774%	Set EDID data to 1080P Dolby 5.1	EDID:1080P&5.1ch
50775%	Set EDID data to 1080P3D Dolby 5.1	EDID:1080P3d&5.1ch

Command	Function	Feedback Example
50776%	Set EDID data to 1080i PCM 2.0ch	EDID:1080i&PCM 2ch
50777%	Set EDID data to 4K*2K PCM 2.0ch	EDID:4K&PCM 2ch
50778%	Check EDID data	EDID:1080P& CM 2ch EDID:1080P& .1ch EDID:1080P3d &5.1ch EDID:4K&PCM 2ch
50799%	Program EDID file, send EDID data within 10s	Waiting for edid within 10 secs!

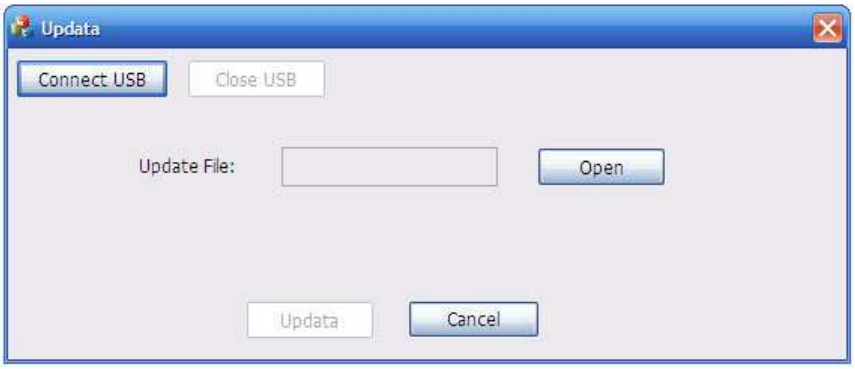
Notes:

1. Please disconnect all the twisted pairs before sending command EDIDUpgrade[X].
2. In above commands, “[”and “]” are symbols for easy reading and do not need to be typed in actual operation.
3. Please remember to end the commands with the ending symbols “.” and “;”.
4. Type the command carefully, it is case-sensitive.

5.4. Firmware Update via USB

To meet the needs of different users or further additional functions, the firmware of the AVG-HDWP70TX-IR can be upgraded via USB. If the unit needs upgrading please download the latest firmware file and then you are able to upgrade it through the update .exe file. Copy the .exe file to the programming PC and double click the program to upgrade the firmware.

When the program is running normally, it will display the interface (as shown in the next figure), please press the button Open and choose the upgrade file, and then press the button Connect USB. It is ready to upgrade.



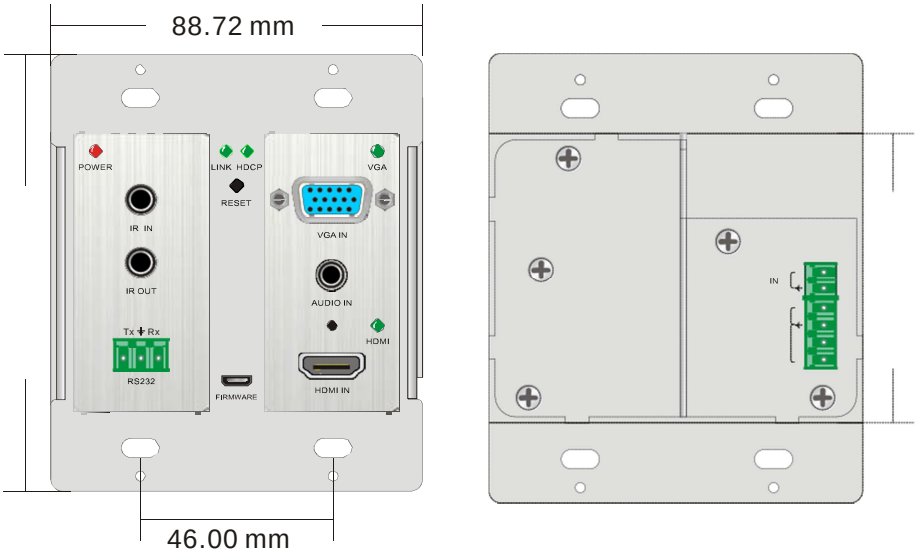
When updates are done, it will appear with a window showing the message **Update success**.

Note: The COM number connected with PC is available only between 1 to 9.

6. Specification

Audio		
Input		
Input Signal	1 HDMI, 1 VGA, 1 AUDIO, 1 IR, 1 RS232	Input Signal
Connector	1 19-pin Type A HDMI female; 1 15-pin VGA; 1 3.5mm stereo jack; 1 3.5mm IR socket;1 3-pin pluggable terminal block	Connector
Output		
Input Signal	1 HDMI, 1 VGA, 1 AUDIO, 1 IR, 1 RS232	Input Signal
Connector	1 19-pin Type A HDMI female; 1 15-pin VGA; 1 3.5mm stereo jack; 1 3.5mm IR socket;1 3-pin pluggable terminal block	Connector
Input Signal	1 HDMI, 1 VGA, 1 AUDIO, 1 IR, 1 RS232	Input Signal
Video		
Frequency Response	20Hz~20KHz	Frequency Response
Impedance	＞10Ω	Impedance
SNR	>85db@20Hz~20KHz	SNR
General		
Resolution	VGA: 800 x600, 1024 x 768, 1280 x 800,1280 x 1024, 1440 x 900,1600 x 1200, 1920 x 1080, 1920 x 1200; HDMI: 4Kx2K, 1080p 3D, 1080P(HD)/1080i/720P/576P/576i/480P/480i	Resolution
Transmission Distance	1080P≤60M (PoC) 4Kx2K≤40M (PoC)	Transmission Distance
Bandwidth	10.2Gbps	Bandwidth
HDMI Standard	Supports HDMI1.4 and HDCP	HDMI Standard
Power Supply	DC 12V 2A; 9.6W	Power Supply
Temperature	-10 ~ +40℃	Temperature
Humidity	10% ~ 90%	Humidity
Chassis Dimension	Decora style two gang	Chassis Dimension
Dimension (W*H*D)	104.5 x 89 x 44 mm	Dimension (W*H*D)
Weight	0.29Kg	Weight

7. Panel Drawing



Note: Pictures shown in this manual are for reference only.

8. Troubleshooting & Maintenance

Problems	Causes	Solutions
Colour loss or no video signal output on HDMI display	The connecting cables may not be connected correctly or unit may have a fault	Check whether the cables are connected correctly and in good working condition.
No HDMI signal output in the device while local HDMI input is in a normal working state		
Output image is noisy		
POWER indicator doesn't work or respond to any operation	Loose or failed power cord connection	Ensure the power cord connection is good
Cannot control the device with 3rd party device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Make sure the RS232 communication parameters are correct set.
Static becomes stronger when connecting the video connectors	Poor grounding	Check the grounding and make sure it is connected well.
Cannot be controlled through RS232 port or front panel buttons	The unit may have a previous fault	Send it to an authorized dealer for repair.

If your problem persists after following the above troubleshooting steps, seek further help from your authorized dealer.